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U.S. Department of Transportation, Docket Operations  
West Building Ground Floor, Room W12-140  
1200 New Jersey Avenue, SE  
Washington, DC 20590

**Re: Petition for an Exemption to Conduct Unmanned Aircraft Systems (UAS) Operations Allowed by Special authority for certain unmanned aircraft systems. Title 49 U.S.C. § 44807, and 14 C.F.R. Part 11 to Authorize Commercial Agricultural- Related Services with UAS Weighing 55 Pounds or More**

The following contains a summary of the attached completed Petition for Exemption seeking relief from specified requirements of Federal Aviation Regulations for our client Sharp Family Vineyards, LLC.

**Description of Relief Sought:** On behalf of my client, Sharp Family Vineyards, LLC, an agricultural services company and pursuant to Title 49 U.S.C. § 44807, Special authority for certain unmanned aircraft systems and 14 C.F.R. Part 11, SHARP FAMILY VINEYARDS (hereafter known as the "Petitioner"), Petitioner hereby respectfully requests expedited approval and necessary exemptions from the following listed Code of Federal Regulations ("CFR") for the purpose of operating the HSE XAG V40 unmanned aircraft systems ("UAS") weighing over 55 pounds but no more than 105.8 pounds for various agricultural operations and noxious weed and vegetation control throughout the United States. The operations will be conducted within and under the conditions outlined herein, or as may be established by the FAA, as required by Title 49 U.S.C. § 44807.

As described more fully below, the requested petition would permit the operation of the HSE XAG V40 by petitioner, under controlled conditions in predetermined airspace that is, 1) Limited in scope 2) Controlled as to access by mission essential personnel only. The petitioner respectfully requests that the FAA grant the requested amendment without delay. Petitioner will

operate the HSE XAG V40 while keeping the documents required by the regulations at the ground control station and immediately accessible to the Pilot in Command (PIC) and by modification of the required markings (registration number) of the UAS to be displayed on the fuselage.

The name and address of the Petitioner is:

Sharp Family Vineyards, LLC

The primary contact for this petition, with a copy to me at the address above is:

Dan Sharp  
18915 State Highway 166  
Fort Davis, TX 79734

## **SYSTEM BENEFITS AND PUBLIC INTEREST**

1. SHARP FAMILY VINEYARDS intent along with a complete range of agricultural vegetation and noxious weed control and management services, utilizing the HSE XAG V40 system optimized principally for spray applications.

Their processes protect crops from biological organisms, including weeds, pathogens, and arthropods, that interferes with the production of crops affecting quality and/or yield, which can impact consumers through higher crop prices. Spraying herbicides benefits agricultural ecology and increases the efficiency of harvesting operations. Further the selective use of chemicals for a safer more targeted application for utility weed control reduces the negative impact of excess pesticide application and residual chemicals being left in the soil or running off into streams or the water table.

2. Applications by manned helicopters for agriculture carries significant risks of fatality.<sup>1</sup> This was such a concern that in 2014 the National Transportation and Safety Board commissioned a report to understand root causes. The enhanced safety achieved using an unmanned aircraft with the specifications described in this petition, as opposed to the much larger, manned aircraft carrying fuel and crew or passengers, is safer and exposes workers and other people on the ground to significantly less risk. Additionally, SHARP FAMILY VINEYARDS's UA use batteries which are not as flammable and explosive as 100LL or Jet A fuel. If there was an emergency where the UA crashed, there is a

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<sup>1</sup> See e.g., NTSB Special Investigative Report on the Safety of Agricultural Aircraft Operations, NTSB/SIR-14/01 (Adopted May 7, 2014):

"78 accidents [and 10 fatalities] occurred during calendar year 2013 and involved some aspect of agricultural (ag) operations, pilot training, or other crop protection activities. The report identifies the following recurring safety issues: lack of ag operations-specific fatigue management guidance, lack of ag operations-specific risk management guidance, inadequate aircraft maintenance, and lack of guidance for pilot knowledge and skills tests."


significantly lower chance of individuals being injured from an explosion or fire.

3. According to a USDA Economic Research Service Report, of the United States' 408 million acres of cropland, about 70% (286 million acres) is commercially treated with crop protection products. Out of that, the agricultural aviation industry treats 71 million acres of cropland aurally each year. By utilizing UAS, this vital portion of our nation's food supply can be treated in a more environmentally safe way, thus protecting our streams from excessive chemical run off, algae blooms, etc.
4. A large portion of the agricultural land is currently sprayed by crews on foot, carrying heavy loads on steep, dangerous terrain. SHARP FAMILY VINEYARDS will replace this method using its aircraft. It is in the interest of safety to reduce worker exposure to this difficult and dangerous environment.
5. Manned aircraft availability and scheduling are becoming increasingly difficult and costly for SHARP FAMILY VINEYARDS customers. On average, each manned aerial application business has 2.1 aircraft, ranging in price from \$100,000 to \$1,400,000 depending on hopper size, engine type and engine size. Pilot shortages, aircraft shortages, and driver shortages are increasing. Smaller owners and non-governmental organizations without several hundred thousand acres are finding it difficult to obtain economical services with these figures. SHARP FAMILY VINEYARDS can increase service providers at a lower cost and alleviate pilot and service shortages for small landowners.
6. Manned airplanes and helicopters produce significant noise pollution that disrupt the public's ability to enjoy both private and public property. UAS are much quieter and will not disrupt the public as much as manned aircraft; thus, the benefit will be recognized as a reduction in noise pollution.
7. Pesticides being sprayed from high elevations can be picked up by the wind and carried for miles. By flying at a lower altitude (6-12 m), and by never leaving the customer's site, there is a significantly reduced chance of pesticides ("driftable fines") being accidentally sprayed in the wrong area. With manned aircraft and helicopters, this can happen in a number of ways: Pilot error or map misinterpretation en route to the site, pesticides being picked up by the wind and blown onto neighboring property affecting commercial cropland and residential areas, and equipment malfunction.

**Specific Code of Federal Regulation ("CFR") sections from which an exemption is sought:** §§ 61.3 (a)(1)(i), 91.7(a), 91.109, 91.119(c), 91.121, 91.151(b), 91.403(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b), 137.19 (c), (d) and (e)(2)(ii)(iii) and (v), 137.31, 137.33, 137.41(c), 137.42.

Should you have any questions, or if you need additional information to support the Petition, please do not hesitate to contact the undersigned.

Respectfully Submitted,



Kelly J. Neubecker

President, UASolutions Group

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